Amendments (Clean copy)

In please amend the application as follows:

1. (Twice Amended) A method for forming a giant magnetoresistive (GMR) sensor element comprising:

forming a seed layer over a substrate;

forming a metal oxide buffer layer over the seed layer;

forming a free ferromagnetic layer over said metal oxide buffer layer; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

forming a non-magnetic conductor spacer layer over said free ferromagnetic layer;

forming a pinned ferromagnetic layer over the non-magnetic conductor spacer layer ; and

forming a pinning material layer over the pinned ferromagnetic layer; and

forming a capping layer over said pinning material layer.

15 (Amended) A method for forming a spin filter giant magnetoresistive (GMR) sensor element comprising:

forming a seed layer over a substrate, said seed layer formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys;

forming a metal oxide buffer layer over the seed layer; said metal oxide buffer layer comprised of NiO or alpha $Fe2O_3$;

forming a high conductivity layer on said metal oxide layer;

forming a free ferromagnetic layer over said high conductivity layer; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

forming a non-magnetic conductor spacer layer over said free ferromagnetic layer;

forming a pinned ferromagnetic layer over the non-magnetic conductor spacer layer ; and

forming a pinning material layer over the pinned ferromagnetic layer;

forming a capping layer over said pinning material layer.

18 (AMENDED) A spin valve giant magnetoresistance (SVGMR) sensor comprising:

a seed layer over a substrate, said seed layer formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys;

a metal oxide buffer layer over the seed layer; said metal oxide buffer layer comprised of NiO or alpha Fe_2O_3;

a free ferromagnetic layer over said metal oxide buffer layer; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

a non-magnetic conductor spacer layer over said free ferromagnetic layer;

a pinned ferromagnetic layer over the non-magnetic conductor spacer layer ; and

a pinning material layer over the pinned ferromagnetic layer; and

a capping layer over said pinning material layer.

31.(Amended) A method for forming a giant magnetoresistive (GMR) sensor element comprising:

forming a seed layer over a substrate, the seed layer formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys;

forming a metal oxide buffer layer over the seed layer; said metal oxide buffer layer comprised of NiO or alpha Fe_2O_3;

forming a free ferromagnetic layer over said metal oxide buffer layer; said free ferromagnetic layer is comprised of: CoFe, CoFe/NiFe, or Co/NiFe; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

forming a non-magnetic conductor spacer layer over said free ferromagnetic layer;

forming a pinned ferromagnetic layer over the non-magnetic conductor spacer layer ; and

forming a pinning material layer over the pinned ferromagnetic layer; and

forming a capping layer over said pinning material layer.

32.(Amended) A spin valve giant magnetoresistance (SVGMR) sensor comprising:

a seed layer over a substrate, said seed layer formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys;

a metal oxide buffer layer over the seed layer; said metal oxide buffer layer comprised of NiO or alpha Fe_2O_3;

a free ferromagnetic layer over said metal oxide buffer layer; said free ferromagnetic layer is comprised of: CoFe, CoFe/NiFe, Co/NiFe; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

a non-magnetic conductor spacer layer over said free ferromagnetic layer;